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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND FORTY-SECOND MEETING

Held at Headquarters, New York,
on Thursday, 7 June 1990, at 3 p.m.

Chairman: Mr. MUNTEANU (Romania)
(Vice-Chairman)

- Attendance by non-members
- Ways and means of maintaining outer space for peaceful purposes (continued)

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In the absence of the Chairman, Mr. Munteanu (Romania), Vice-Chairman, took the Chair.

The meeting was called to order at 4 p.m.

ATTENDANCE BY NON-MEMBERS OF THE COMMITTEE

The CHAIRMAN: I should like to inform members that we have received a note verbale from the Permanent Representative of Costa Rica to the United Nations in which he requests permission to attend the current session of the Committee on the Peaceful Uses of Outer Space as an observer. I should like to request that we invite the delegation of Costa Rica to attend the current session of the Committee under the usual understanding.

If there is no objection, we shall proceed accordingly.

It was so decided.

WAYS AND MEANS OF MAINTAINING OUTER SPACE FOR PEACEFUL PURPOSES (continued)

The CHAIRMAN: This afternoon the Committee will conclude its debate on agenda item 4. After concluding the debate, we will have a presentation by Mr. Gerard Brachet, Director General of SPOT-IMAGE, on the applications of the SPOT satellite for development.

Mr. ZLAUVINEN (Argentina)(interpretation from Spanish): Aware of the importance of outer space for the development of all nations, the Republic of Argentina is constantly working to preserve that sphere exclusively for peaceful purposes.

We feel that because of their direct implications for our Earth as a whole activities in outer space should be carried out not only for exclusively peaceful purposes but also for the benefit and development of all mankind.

Hence my delegation feels that every necessary precaution should be taken to prevent an arms race in outer space. In that regard it would be wise for the

(Mr. Zlauvinen, Argentina)

Committee to arrive at a set of ways and means by which the use of outer space could be preserved exclusively for peaceful purposes.

We are aware that this task is neither easy nor simple, for too many national interests are involved. Nevertheless, we feel that an in-depth study and a correct assessment of such possible ways and means would enable us to reach common and consensus positions.

In taking up this item we have repeatedly wondered whether a link should be established between the activities of our Committee and the Ad Hoc Committee on the prevention of an arms race in outer space of the Conference on Disarmament. My delegation feels that such a link does in fact exist, since both forums are separately seized of both aspects of the question. In the Conference on Disarmament the Republic of Argentina has repeatedly emphasized the importance of unilateral declarations by the most advanced space Powers to the effect that they have not stationed any weapons systems in outer space.

We feel that, although such declarations do not imply any international obligation or replace any future comprehensive agreement on the question, they do nevertheless promote a climate of greater confidence and encourage other countries to adopt similar positions.

In that same vein my delegation is categorically opposed to any experiments, tests or developments that might in the not-too-distant future make possible the establishment of weapons systems in outer space.

We have been appalled to note that some more advanced countries are encouraging such activities to an increasing degree. This leads us to ponder the effectiveness of our work in the Committee and, at the same time, to wonder whether we are really on the right road.

Experience in other areas of international relations has shown us that a closer interrelationship among all parties with conflicting interests, the exchange

(Mr. Zlauvinen, Argentina)

of substantive information on questions of security and a greater co-operation among all involved are good ways to build confidence.

In the sphere of disarmament, such measures make for improved communication and transparency, and that, in the final analysis, facilitates progress towards the adoption of concrete disarmament measures.

Similarly, we can say that a process of greater co-operation in the peaceful use of outer space can foster a climate of greater confidence and transparency, which will in the end contribute to preventing an arms race in outer space.

Moreover, in outer space we do have an advantage, in principle, compared to questions of disarmament, namely, that since there are as yet no weapons systems deployed in outer space that must be dismantled, our task consists solely in defining and adopting appropriate preventive measures.

In carrying out our task, we must concentrate our work in that area. If we fail, the Committee's work could be seriously affected, opportunities for co-operation will become increasingly narrow and, in the final analysis, the use of outer space for peaceful purposes will remain in the realm of wishful thinking. That is not at all our goal.

Lastly, in light of what I have just said, I should like to express the Argentine delegation's support for the formal proposal made this morning by the representative of Chile regarding a report to the Committee from the Ad Hoc Committee on the prevention of an arms race in outer space of the Conference on Disarmament. We also believe that our Committee should in turn furnish a report on its work to the Ad Hoc Committee of the Conference on Disarmament. That reciprocal exchange of information would increase the effectiveness of both bodies without thereby confusing their respective mandates. In addition, the proposal reflects normal and healthy practice within the United Nations system.

READEX FICHE

Mr. PERRI (Brazil) (interpretation from Spanish): I am speaking not out of mere regional solidarity, but because of my conviction that it is important to define certain procedures of importance to the Committee's deliberations and to the discharge of its mandate. I believe that the proposal made by Chile and supported just now by Argentina should not be shunted aside for merely procedural reasons; we consider it to have substantive value. We do not think that a document should be withheld from distribution simply because that would diverge from the Committee's past procedure. We need to know more about what the international community is doing in the field of outer space, and relevant information should be made available to us.

Many of the countries members of the Committee on the Peaceful Uses of Outer Space are also members of the Conference on Disarmament. Both bodies are engaged in a multilateral effort towards a greater understanding; we are all striving to foster civilized forms of coexistence; we are all working to define principles that will be valid both in this Committee and in the Conference on Disarmament, in order to provide the international community with better results from our efforts towards peace and security. The only reason we are here is to work, on the basis of our convictions, for the international community.

Let me recall some necessary points of reference for our Committee's work. I begin with General Assembly resolution 1884 (XVIII), which solemly calls upon all States

> "To refrain from placing in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, [or] installing such weapons on celestial bodies". (General Assembly resolution 1884 (XVIII), para. 2 (a))

That resolution was adopted unanimously by the General Assembly on 17 October 1963.

(Mr. Perri, Brazil)

Then there is General Assembly resolution 110 (II) of 3 November 1947 - and this is part of the history of the United Nations - which

"Condemns all forms of propaganda ... which is either designed or likely to provoke or encourage any threat to the peace, breach of the peace, or act of aggression". (General Assembly resolution 110 (II), para. 1)

We consider that resolution to be applicable to outer space, as did those who preceded us and who negotiated the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

I have been reading through the preambular part of that Treaty, and I am convinced it is relevant to the work of our Committee. Article III of the Treaty states that

"States Parties to the Treaty shall carry on activities in the exploration and use of outer space ... in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding". (General Assembly resolution 2222 (XXI), annex)

Article IV states that

"States Parties to the treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station weapons in outer space in any other manner". (Ibid.)

I recall that it was we who negotiated, concluded and ratified that Treaty. If we were democratic, if we defended freedom of information, if we were determined to unite to defend peace, then we would have to recognize that everything that goes on in the Conference on Disarmanent in Geneva is of interest to this Committee and

(Mr. Perri, Brazil)

vice versa. What we are dealing with here is of a multidisciplinary character; it has general applications; and it is impossible to emphasize one aspect and then state that the other aspect does not exist. Both aspects do exist.

That is what I wanted to mention here, in order to show that it was not out of regional solidarity that I asked to speak, but out of the conviction - which I think is shared by the Committee - that we are working for the peaceful uses of outer space and that this is a question of concern to us all. If we are interested in promoting peaceful uses, then we are interested in condemning military uses and in promoting the negotiation of ways and means to prevent the latter from predominating over the former. That is only logic - and very basic logic at that.

Ms. REDEKER (Federal Republic of Germany): Naturally, the Federal Republic of Germany is concerned about the arms race. Therefore, we are working very hard - in the Conference on Disarmament in Geneva, for example.

As far as the proposal made by Chile is concerned, I know, and I think everyone knows, that any Member State has the right to obtain any document of the Conference on Disarmament. I do not think any delegation would have any problem in obtaining documents of interest. There is thus no need for an official distribution in the Committee. I fully agree with the comment of the representative of the United States: This Committee has very important matters to deal with, and it is in everybody's interest to avoid duplication or multiplication of work.

Mr. OBOKPOLOR (Nigeria): In our earlier statement on the agenda item my delegation stated its belief that, as the new frontier of human activity, outer space should be maintained only for peaceful purposes. To achieve this we must devise a way whereby it is ensured that all nations, irrespective of their level of economic and technological development, have a stake in the peaceful exploration of and activities in outer space. We cannot afford to start another arms race or other hostile activities in outer space as this would run counter to the aims and aspirations of the international community.

My delegation feels that the inclusion of agenda item 4 further demonstrates the understanding of the Committee's purpose. We have heard the various views and statements of representatives. We are quite happy that we are not all in total disagreement on the principle underlying the agenda item. Since the result of our deliberations is always based on general consensus, we believe that in the end a compromise will be worked out.

To want peace, one must understand war. To discuss ways and means of maintaining outer space for peaceful purposes, one must discuss ways and means of preventing an arms race in space at all cost. It has been pointed out by the representatives of France and the United States of America that the question of an arms race is an issue for the Conference on Disarmament and not one that this Committee could discuss. My delegation is of the view that we are discussing outer space, where arms do not exist as yet, and such being the case ways and means must be found to maintain the status quo. The Conference on Disarmament is charged with the responsibility of discussing disarmament. We believe that there is a link between the Committee on the Peaceful Uses of Outer Space and the Conference on Disarmament, both being organs of the United Nations set up to maintain peace and harmony among nations. Interrelationship and understanding among nations are

(Mr. Obokpolor, Nigeria)

possible on this matter. I think the problem we have is just a matter of semantics as to where our work stops. In view of my delegation's stand on this matter, I would suggest that the work of both the Conference on Disarmament and this Committee be looked into, so as to avoid this important agenda item's not being discussed.

Mr. KHABIROV (Union of Soviet Socialist Republics) (interpretation from Russian): We cannot fail to point out the virtues of the proposal put forward by the representative of Chile. At the same time we should like to point out the virtues of the proposal made by the representative of Argentina, who went a bit further and proposed an exchange of information and documents between the Committee on the Peaceful Uses of Outer Space and the Conference on Disarmament.

Speaking frankly, we do not see any special problem in acceding to those requests or proposals. I think we could take a consensus decision in this regard and strengthen it, put it into our report and thereby take another step forward in our work on this priority issue on our agenda.

We would also point out that the proposals put forward by the representatives of Argentina, Brazil, Chile and other countries have but one aim, and it is something with which our delegation is in agreement. We refer to the need for mutually strengthening the work between our Committee and the Conference on Disarmament and maintaining constant contacts and interaction between the two bodies. We appeal to all delegations to adopt a consensus decision on this item.

Mr. BOYER (France): Naturally I followed most attentively since the beginning the proposal of our colleague from Chile: this problem of the circulation of documents.

At the very outset the French delegation felt that this was a courtesy measure, with which I was quite prepared to go along with, namely, that the United

(Mr. Boyer, France)

Nations services could see to it that the representative of Chile might have the report of the Disarmament Commission available. As long as the matter rested there I had no objection; I saw in it, as I said, a gesture of courtesy and mutual assistance towards one of our colleagues.

But in listening in succession the representative of Argentina, the representative of Brazil and the representative of the Soviet Union, it seemed to me that this proposal was taking on quite a different coloration than the one I had ascribed to it in the beginning, because indeed what we have here is the introduction into our Committee of an element which naturally touches very closely upon disarmament questions. Therefore I am obliged to repeat, or rather to recall, the statement of the French delegation at the beginning of this discussion, that is, in our view the Conference on Disarmament is the sole body competent to deal with disarmament.

But I now revert to my initial words, namely, if it is simply a measure that would allow us to help a colleague in some way, without its being mentioned in official documents of the United Nations, then the natural sympathy of the French delegation and my own personal sympathy towards the Chilean delegation and its Head would incline us to respond favourably, but within the very strict limits I have just recalled.

Mr. JANUS (Netherlands): I must say that I am a bit puzzled about this discussion because some delegations have mentioned that these documents referred to in the proposal of the Chilean representative are actually available to all delegations. They are official documents that have been distributed to member countries of the United Nations and are available, and therefore I do not understand the need for a specific request to have the Secretariat redistribute them.

(Mr. Janus, Netherlands)

It is well-known that my country has always taken the position that the Committee should not address issues of disarmament or the prevention of an arms race in outer space. Those are very important issues, certainly, but in our view they belong in the Conference on Disarmament.

If the request of the representative of Chile, supported by others, implies that those reports become part of the official documentation of the Committee and that there would be some discussion on it, then for that reason we would certainly not support such a proposal.

Discussion on the mandate of the Committee has a very long history, as the representative of the United States has pointed out and explained to us. I hope that this discussion can be completed in the very near future, so that we can decide by consensus what is the accepted mandate of the Committee.

Mr. FREUDENSCHUSS (Austria): First of all, I should like to recall what the representative of the Soviet Union said this morning, as reported in the press release:

> "Any obstacles between the Committee and the Conference on Disarmament could only be removed through general agreement by the entire Committee and that interaction between those two bodies would only be possible on the basis of consensus."

I think that he, in essence, repeated that statement this afternoon.

Like the representative of the Netherlands, I am a little puzzled, though perhaps in a different sense. We have had several requests in the past for documents to be circulated. I recall documents of the Advisory Committee on Administrative and Budgetary Questions, the United Nations Development Programme, and others being circulated. On the other hand, of course, we are very well aware of the particular sensitivity of the question; and so perhaps the comparison is not entirely appropriate.

(Mr. Freudenschuss, Austria)

However, we do not know precisely what report we are talking about. Again according to the press release, the representative of Chile asked for a report from the Conference on Disarmament on the relation between the two bodies; someone else mentioned another report. As there is a certain confusion as to what report we are talking about, I believe that we might at this stage suspend our discussion on the point and entrust to the Secretariat the task of gathering information and researching what kind of document, if any, is available. At a later stage, when the necessary information becomes available, we can come back to it if necessary.

Mr. GONZALEZ (Chile) (interpretation from Spanish): I would simply like to clarify things.

First, we have carefully followed the debate that has arisen. Our attention is drawn to the statement of the representative of the Federal Republic of Germany regarding the enormous quantity of work that we have on this subject. We waited for almost an hour before the meeting began. Apparently there was not much work, so perhaps I may be forgiven a little doubt on that issue.

Secondly, I believe that the representative of Argentina expanded in a rather creative manner on our original proposal. Brazil also shed additional light by quoting, among other things, the preambular paragraph of the 1967 outer space Treaty concerning propaganda and by referring to General Assembly resolution 110 (II) and to articles III and IV of the said Treaty. I do not know whether we should establish a paranthesis in the work of our Committee when we deal with certain articles of the outer space Treaty that are not within the competence of this Committee, or that of the Conference on Disarmament; perhaps they should then be dealt with literally on the moon.

In any case, I wish clearly to establish my delegation's two lines of action. The first is reflected in my colleague's statement this morning, as follows:

(Mr. Gonzalez, Chile)

"... to request from the Conference a report on the number of meetings held to date by that Ad Hoc Committee and on any possible progress and negotiations that have been held therein". (341st meeting, p. 17)

In that regard, we are not prejudging the mandate of this or that Committee. Let a literal interpretation of our proposal suffice. Without prejudice to the foregoing, my delegation later decided that it might be useful to hold a constructive debate on the preliminary information provided on the status of negotiations - something which would not necessarily require a report, and the Secretariat could inform us that, for example, this year four meetings had been held in Geneva and substantive progress had been made on certain aspects.

Unfortunately, Chile is a small, developing country; we are not members of the Conference on Disarmament in Geneva and we do not receive the fullest information. Obviously, we would like to know about the very constructive progress that has apparently been made in Geneva. It is so constructive and effective, apparently, that we cannot even have the right to receive information about it. Apparently, the problem has been resolved.

Aside from requesting a report, we also wanted some factual information, which the Secretariat could perfectly well have provided, as to how many meetings were held, which delegations spoke, which proposals were circulated, and so on. That would by no means challenge the mandate of the Conference on Disarmament in Geneva. It is important that we, as a forum of the United Nations, have information on what is going on in bodies related to our work.

Finally, in connection with the concern of the representative of the Netherlands, we must come to the conclusion that we can never ask for the circulation of any document that is not strictly related to items under discussion. We might soon reach agreement and in future decide by consensus on a

(Mr. Gonzalez, Chile)

rule to prohibit the circulation of documents from the United Nations Development Programme or any other United Nations body, or its subsidiary organs, by way of restructuring its work and improving its effectiveness. But it is precisely because we want to improve the effectiveness of our work in this Committee that we wish to have as much information as possible.

Mr. WULF (Sweden): In our opinion the Conference on Disarmament is the proper forum for discussions and negotiations on measures to prevent an arms race in outer space. There are several positions on the issue. Perhaps it would be helpful to think a little more about the proposal made by the representative of France, which my delegation believes has merits and could be further considered as a compromise solution to the problem we are discussing.

The CHAIRMAN: If there is no other speaker, we shall have concluded the debate on item 4.

Mr. KHABIROV (Union of Soviet Socialist Republics) (interpretation from Russian): We should like to know where we stand now with regard to the proposals that have been made. As we understand it, three proposals have been put forward - the first from the representative of Chile, the second a compromise proposal made by France, supported by Sweden, and the third by the representative of Austria, which is to postpone discussion of the question for a while in order to give the delegations concerned the chance to exchange views. We should like to know your conclusions on the matter, Sir, so that we may appropriately determine our own stand.

The CHAIRMAN: I remind the representative of the Soviet Union that he himself proposed that there should be only consensus at the conclusion of the debate.

I call on the Secretary of the Committee to explain the position.

Mr. JASENTULIYANA (Secretary of the Committee): It is my understanding that consultations are going on among members of the Committee, and I have passed on some of the information that is now available. We shall have to wait some time before we know the results of the consultations.

The CHAIRMAN: I now invite Mr. Gerard Brachet, Director-General of SPOT-IMAGE of France, to make a presentation on the applications of the SPOT satellite for development. At the end of the presentation the Committee will adjourn. The next meeting will be held tomorrow at 10.30 a.m., when we shall begin the debate on items 5 and 7

There followed a technical presentation.

The meeting rose at 4.45 p.m.

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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND FORTY-THIRD MEETING

Held at Headquarters, New York,
on Friday, 8 June 1990, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Report of the Scientific and Technical Sub-Committee on the work of its twenty-seventh session

- Implementation of the recommendations of the Second United Nations Conference on the Exploration and peaceful uses of outer space

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The meeting was called to order at 10.55 a.m.

REPORT OF THE SCIENTIFIC AND TECHNICAL SUB-COMMITTEE ON THE WORK OF ITS TWENTY-SEVENTH SESSION (A/AC.105/456)

IMPLEMENTATION OF THE RECOMMENDATIONS OF THE SECOND UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

The CHAIRMAN: I call on Mr. Adigun Ade Abiodun, the United Nations Expert on Space Applications.

Mr. ABIODUN (United Nations Expert on Space Applications): Thank you very much, Mr. Chairman, for giving me this opportunity to address the Committee on the activities of the United Nations Programme on Space Applications during the Committee's consideration of agenda items 5 and 7 at the current session. My statement will focus in part on the activities and direction of the Programme during the period 1989 to 1991. Details of these activities, which wre mandated by the General Assembly, are contained in my current report (A/AC.105/446), now before the Committee.

Annex I of that report contains a summary of the activities that were conducted by the Programme in the period 1983-1989 in compliance with the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) and General Assembly resolution 37/90. Document A/AC.105/451, also before the Committee, has been prepared by the Outer Space Affairs Division in response to the request of the Working Group of the Whole, and it contains the implementation status of UNISPACE 82 recommendations.

My statement will also address the status of the preparations for participation by the United Nacions in International Space Year.

In 1989, 40 long-term fellowships were offered by the following Governments: Austria offered two fellowships in microwave technology; Brazil offered 10 fellowships in remote sensing technology; the German Democratic Republic offered three fellowships in basic space science, satellite geodesy and remote sensing

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applications; the Union of Soviet Socialist Republics offered 15 fellowships in geodesy, cartography and aerial photography and six in basic space research; and the European Space Agency offered four fellowships in satellite meteorology, remote sensing information systems, communications engineering and telecommunications. The status of those offers is shown in annex II, page 21, of my report. I am also happy to report that the offers have been renewed for the 1990-1991 period. The United Nations is currently receiving applications for their implementation. Beginning in October this year the Government of the USSR will also offer five additional training opportunities and postgraduate fellowships leading to Master's or Ph.D. degrees in optical-electronic systems of remote sensing of the Earth and in the monitoring of the Earth's resources and its environment. These fellowships will be tenable at the Scientific and Educational Centre jointly operated by the People's Friendship University and the Scientific Research Institute for Space Instrumentation, both in Moscow.

I am also pleased to report that the Government of China recently communicated to the United Nations its decision to offer, beginning in October 1990, two long-term research fellowships in geodesy, photogrammetry and remote sensing. Those fellowships will be tenable at Wuhai Technical University of Surveying and Mapping, Wuhai, China. Relevant papers are being dispatched to Member States for their attention and for nomination of qualified candidates.

The 47 fellowships outlined above provide for post-graduate professional experience, post-doctoral research experience and educational opportunities leading to either a Master's or a Ph.D. degree in relevant space science and technology disciplines. The nature and scope of the fellowship awards, the methodology being adopted for the selection of the fellowships' beneficiaries and other pertinent

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information on education and training activities being administered by the Programme are set out in document A/AC.105/454. That document, now before the Committee, was prepared at the request of the Working Group of the Whole.

The Working Group of the Whole also directed that the Division should request the States that have benefited from the long-term fellowships that are administered by the Programme to carry out an evaluation of the benefits they have derived from their participation in these fellowship programmes.

(Mr. Abiodun)

At this time I wish to inform delegations in this Committee that the Division has forwarded letters with suggested guidelines for the preparation of the aforementioned evaluation to 26 Member States that have had at least one participant in the long-term fellowship programmes. To date the Divison has received replies from five Member States. These replies and others that may be received in the near future will be analysed and reported to the Scientific and Technical Sub-Committee of the Committee on the Peaceful Uses of Outer Space at its next session.

With regard to training courses, meetings and workshops, in 1989 four training courses that focused on the development of skills and knowledge necessary to support and stimulate research and applications in remote sensing were organized. In addition two meetings of experts on remote sensing and satellite meteorology applications to marine resources and coastal management and on the development of remote sensing skills and knowledge and one workshop on oceanographic/marine space information systems were organized. Details of these activities are contained in the seven documents A/AC.105/436 through A/AC.105/442.

These activities provided opportunities for participants from the developing countries to gain practical knowledge in digital analysis of satellite data of natural resources and the Earth's environment and the use of geographical information systems; in the development and application of information extraction techniques and for merging disparate data sets that could be used for evaluating geological formations and their occurrences; and in the evaluation and management of marine resources and the monitoring of coastal environment.

These activities were cosponsored and/or hosted by the Governments of Australia, the German Democratic Republic, Italy, Pakistan, Spain, the USSR and the United Kingdom of Great Britain and Northern Ireland, as well as by the Food and Agriculture Organization of the United Nations (FAO), the World Meteorological

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Organization (WMO), the European Space Agency (ESA), the United Nations Development Programme (UNDP), the Economic and Social Commission for Asia and the Pacific (ESCAP) and the United Nations Outer Space Affairs Division.

One of the training courses scheduled for this year is the United Nations/Sweden Training Course on Remote Sensing Education for Educators. The first phase of this course was organized at the University of Stockholm from 14 May through 2 June. The second phase is almost concluded at the facilities of the Swedish Space Corporation in Kiruna. Stockholm University will also be the venue for the third phase, which is going to be from 10 to 15 June.. This course focuses on the development of practical knowledge and skills of educators from developing countries so that they can subsequently introduce elements of remote sensing technology and environmental sciences as may be appropriate in the educational curricula in their respective countries. The course is being cosponsored by the Government of Sweden through the Swedish Agency for International Technical and Economic Co-operation and the Swedish Space Corporation.

Because of insufficient funds, the second training course, which would have been the fifteenth United Nations/FAO International Training Course on Remote Sensing Applications to Renewable Resources and was originally scheduled for a period of three weeks later this year, is being replaced by a 10-day International Workshop on Remote Sensing Technology with emphasis on geo-information sciences for decision makers. This workshop, which is being co-sponsored by the Government of France, the United Nations Outer Space Affairs Division, FAO and the European Space Agency will be held at FAO headquarters in Rome in November this year.

Two other workshops scheduled to take place this year include the United Nations Workshop on Space Communications for Development, which was successfully organized in Havana, Cuba, from 26 to 30 March this year and was co-sponsored by

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the Government of Cuba. This workshop brought together 61 participants from 14 countries of the Economic Commission for Latin America and the Caribbean (ECLAC) region, six industrialized countries outside the ECLAC region and seven international and regional organizations who discussed the current state and expected new developments in communications technology. Through working group sessions, the workshop evolved a number of recommendations that would promote regional and international co-operation in three broad areas, namely, applications of satellite communications to rural education, medicine and for disaster relief operations. As a participant in this workshop as well as in the Space Conference of the Americas held in March this year in San José, Costa Rica, the Government of Spain has taken an interest in these recommendations. Through its Ministry of Communications the Government of Spain has convened a meeting in Madrid from 5 through 7 June of this year of high-level officials from countries in the ECLAC region to discuss its HISPASAT Communications Satellites System and how this can be used for the economic and social development of the ECLAC region. The second workshop, which will focus on microwave remote sensing technology with particular emphasis on future missions and the understanding and use of microwave data for the management of natural resources and the Earth's environment, is being cosponsored by the Government of Brazil, the United Nations Outer Space Affairs Division, FAO and the European Space Agency, and will be held at the Institute of Space Research (INPE), at San Jose dos Campos, Brazil, from 9 to 14 September this year.

I am happy to report that the reactions of the international community, both industrialized and developing countries, have been very positive and that there has been much enthusiasm for the United Nations/Sweden Training Course on Remote Sensing Education for Educators and for the proposed Workshop on Basic Space Science, which is being cosponsored by the Government of India and will be hosted by the Indian Space Research Organization in 1991. These two activities are being

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organized by the Programme for the first time. They will be strengthened in the immediate future. Details of these and other aforementioned activities are contained in paragraph 31 of my report (A/AC.105/446).

The remaining training courses and workshops scheduled for 1991 include: first, a United Nations Workshop on Space Technology Applications to Minimize and Alleviate the Impact of Natural Disasters being organized in co-operation with the Government of China and the headquarters of the Economic and Social Commission for Asia and the Pacific (ESCAP) to be held in Beijing in September 1991; secondly, the XVth United Nations/FAO International Training Course on Remote Sensing Applications to be organized in co-operation with the Government of Italy and tentatively scheduled to be held at FAO headquarters in Rome; thirdly, the Sixth United Nations/FAO/WMO/ESA Training Course on the Use of Remote Sensing Systems in Hydrological and Agrometeorological Applications for the benefit of ECLAC Member States; and, fourthly, the Third United Nations/European Space Agency Workshop on Microwave Remote Sensing Technology for the benefit of Member States in the Economic Commission for Africa (ECA) region. The Microwave Technology Workshop series constitute a continuing joint effort by the United Nations and the European Space Agency. It was initiated in 1988 with a workshop organized in Bangkok for the benefit of ESCAP Member States to provide needed awareness, in particular to the developing countries, on the forthcoming era of operational microwave remote sensing technology.

With emphasis on technical advisory services, the Programme is currently providing technical assistance to the secretariat of the Indian Ocean Marine Affairs Co-operation Council for the planning of oceanographic/marine pilot projects to be carried out with financial support from the UNDP and support of technical experts funded by the Government of France. The Programme is also assisting the ECA Headquarters in Addis Ababa to evaluate the remote sensing

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programme of the Regional Centre for Services in Surveying, Mapping and Remote Sensing in Nairobi; and the Programme assisted the Government of Costa Rica in the preparation of the Space Conference of the Americas: Prospects of Co-operation for Development, which was held in San José, Costa Rica, from 12 to 16 March this year. During that Conference the Outer Space Affairs Division organized a special plenary session on "Possible programmes and projects on space applications for Latin America and the Caribbean region". The United Nations has been requested to participate, through the Programme, in the implementation of the follow-up activities to the Conference.

On space information, during the last session of the Scientific and Technical Sub-Committee a publication entitled "Seminars of the United Nations Programme on Space Applications" (A/AC.105/443) was issued and distributed to all delegations. This is the first in a series of publications that will focus annually on a number of selected papers that are presented at meetings, workshops and training courses organized under the auspices of the Programme.

(Mr. Abiodun)

That publication is being issued in order to provide a wider circulation of ideas and information that could be of significant benefit to Member States. Although the first edition focused exclusively on remote sensing technology, future issues will address other aspects of space science and technology as may be appropriate.

In the area of promoting greater co-operation in space science and technology, the activities carried out under the auspices of the Programme in 1989 included the organization of an international symposium on "Space Commercialization: Roles of Developing Countries", in co-operation with the Space Institute of the University of Tennessee in March last year in Nashville, Tennessee. It also co-operated in organizing a special session on "Space and Flood Management" during the fortieth International Astronautical Federation (IAF) Congress held at Malaga, Spain, in October last year. This year, the Programme will co-sponsor a scientific panel on "Equatorial Electrojet and Related Phenomena" to be organized during the twenty-eighth plenary meeting of the Committee on Space Research in The Hague in June and July this year; and the special current-event session on "Space and Forest Management" during the forty-first IAF Congress in Dresden, German Democratic Republic, in October. The Programme has sponsored and will continue to sponsor the participation of specialists from developing countries in those activities.

The various types of support received by the Programme in 1989 have been very encouraging. They were provided by Member States, other departments and agencies of the United Nations system, governmental and non-governmental organizations, international and regional entities, and many dedicated experts, and are summarized in paragraph 45 of my report (A/AC.105/446).

Support for the 1989 activities of the Programme was received specifically from the following Member States and international and regional organizations and entities: Australia, Austria, Brazil, Canada, France, the German Democratic

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Republic, Italy, Nigeria, Pakistan, Spain, Sweden, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, as well as the Food and Agriculture Organization of the United Nations, the United Nations Development Programme, the United Nations Educational, Scientific and Cultural Organization, including its Intergovernmental Oceanographic Commission, the World Meteorological Organization, the Economic and Social Commission for Asia and the Pacific headquarters in Bangkok, the European Space Agency, and the International Maritime Satellite Organization (INMARSAT).

In addition, I am pleased to inform the Committee that the Governments of Austria, Nigeria and Pakistan made voluntary cash contributions of $10,000, $5,000 and $15,000 respectively, to the United Nations in support of the 1989 activities of the Programme. I am also pleased to report that in February of this year, the Government of Pakistan made a voluntary cash contribution of $12,000 in support of the 1990 activities of the Programme.

I wish to take this opportunity to thank the Government of Austria for its hint that it plans to contribute financially to support the Programme this year, and to express the appreciation and gratitude of the United Nations and my personal thanks for States' co-operation and support of the Programme. I also wish to convey my thanks to Mr. Safronchuk, the Under-Secretary-General for Political and Security Council Affairs, Mr. Jasentuliyana, Chief of the Outer Space Affairs Division, and my Professional and General Service colleagues in the Outer Space Affairs Division for the in-house support I have received in the discharge of my responsibilities.

In conclusion, I wish to address two important matters: the first is the development of indigenous capability, and the second, International Space Year. Today, it is globally accepted that space science and technology can contribute significantly to the achievement of the economic and social development goals of

(Mr. Abiodun)

nations, as well as to the understanding and safeguarding of the global environment. The international community, from both the political and scientific perspectives, is now embarking on long-term global programmes such as Mission to Planet Earth, whose objective is to understand how planet Earth works and what its future might be as a result of human activities that are altering natural balances within the planet, and the International Geosphere-Biosphere Programme, whose objective is to describe and understand at least within a 15-year period, beginning this year, the interactive processes that regulate the total Earth system, the changes that are occurring in the system and the manner in which they are influenced by human activities. Those programmes will rely heavily on Earth environmental data acquired by a variety of space sensor systems. The first prerequisite to an effective participation in such programmes is the availability of well-educated, indigenous human resources, coupled with the commitment of each country to make full use of those local talents once they become available.

The United Nations is aware of that situation. Accordingly, in the past four years, the United Nations Space Applications Programme has convened four meetings, regionally and internationally, in order to promote the development of indigenous capability in remote sensing technology in the developing countries. The deliberations at the United Nations regional meetings conducted in India in 1985, Mexico in 1986 and Nigeria in 1987, and the recommendations of the subsequent international meeting organized in the United Kingdom in 1989, focused specifically on the need for the United Nations to play a major leadership role in promoting the necessary educational opportunities, particularly in the developing countries, for the integration of space science and technology into national education programmes. These recommendations have subsequently been developed into a project document for the establishment of regional centres for space science and technology education in Africa, Asia and the Pacific, Latin America and the Caribbean, and

(Mr. Abiodun)

Western Asia. The housing of those centres in existing national or regional instituions of higher education or research in each region will enable the centres to take advantage of the existing physical and human resources in those institutions.

As members are aware, at its last session the Scientific and Technical Sub-Committee took the following decision in respect of those centres:

"Taking into account paragraph 9 (c) of General Assembly resolution 44/46, the United Nations should lead, with the active support of its specialized agencies and other international organizations, an international effort to establish regional centres for space science and technology education in existing national/regional educational institutions in the developing countries." (A/AC.105/456, annex II, para. 4 (n)).

The project document referred to earlier will serve as the instrument for the establishment of the regional centres for space science and technology education in the developing countries. It will be made available on request. The project document focuses on the centres' objectives; the justification for their establishment; programme of activities; programme output; the work plan of the centres; personnel matters; needed facilities, including equipment; contributions needed for the establishment of the centres by the host countries, other participating Governments, the sponsors, and the executing agencies; and an outline of the curriculum of the centres.

The first priority of those centres will be the provision of education for educators, particularly for those in the natural and physical science disciplines in institutions of higher learning and research establishments in the developing countries. Such an education programme should prepare those educators to introduce relevant aspects of space science and technology into existing education curricula in their respective countries. The programme of studies at each centre will

(Mr. Abiodun)

initially focus on remote sensing technology and relevant environmental disciplines. That goal would be achieved through a 9-month intensive education and research experience at the centres.

Three conditions would need to be fulfilled before each centre could be established and become functional. First, as to the host countries, I am pleased to inform the Committee that in each of the regions, a number of countries have expressed interest in hosting such a centre.

(Mr. Abiodun)

In order to ensure that each centre serves the interest of all Member States in each region, we are requesting the participation of each economic commission in the host country selection process.

Secondly, as to the development of a comprehensive curriculum, I wish to inform the Committee that we are requesting the participation of the international scientific community, from both the industrialized and the developing countries, to contribute to the development of such a curriculum. Indeed, this same community has gladly contributed to the evolution of the project document to which I have referred.

Thirdly, as to funding, we are soliciting the support of Member States and relevant funding institutions for the needed funds. The outcome of this funding campaign will be brought to the attention of this Committee as well as the Scientific and Technical Sub-Committee at their next sessions, in 1991.

With reference to International Space Year, as the Committee is aware, the General Assembly, at its forty-fourth session, in its resolution 44/46 of 8 December 1989, endorsed the initiative of the international scientific organizations and bodies to designate 1992 as International Space Year, also known as ISY. It also endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that international co-operation be promoted through International Space Year and that the training and educational capabilities of the United Nations Programme on Space Applications be utilized to bring about a meaningful role for the United Nations. Subsequently the Outer Space Affairs Division prepared a programme of activities that can be found in document A/AC.105/445 and Add.1 and 2, entitled "Participation of the United Nations in International Space Year". These documents are now before the Committee.

(Mr. Abiodun)

The scope of activities presented in those documents focuses on three major areas: first, management of the resources of the Earth and its environment; secondly, long-term education programmes; and, thirdly, public education. It is hoped that these activities will provide encouragement to all countries, particularly the developing countries, not only to participate in the applications of space technology but also to undertake programmes that could contribute to the understanding, management and safeguarding of the global environment, to the solution of local and transnational environmental problems and to the development of the technology to meet local needs. International Space Year also offers the United Nations and the international community a unique opportunity to achieve major progress in the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

The specific activities set forth in these documents include, but are not limited to, the organization of a number of workshops, conferences, training courses, projects dealing with the management of the coastal and marine environment, essay contests for high-school students at the national level on the theme "My vision of outer space and the promise it holds for my country and mankind", monthly lectures and exhibitions at United Nations Headquarters here in New York, a telecast on the theme of International Space Year, the establishment of centres for space science and technology education, collection and distribution of literature on space science and technology, publication and distribution of booklets on "Mission to Planet Earth" and on space education, as well as recommendations to concerned Member States to establish universariums at the national level in order to encourage and stimulate interest in science in general, and in space science and technology in particular, among young people and the general public.

(Mr. Abiodun)

In preparing these documents, consultations were initiated with Member States with other departments and agencies of the United Nations system, as well as with international organizations. These consultations are continuing, and their outcome as well as the time schedule for each of the activities, including any modifications to the contents of these documents, will be reflected in an occasional newsletter to be issued by the Outer Space Affairs Division. The following Member States and international organizations and institutions have declared their interest and their readiness to co-operate with the United Nations in respect of the activities set forth in this document: China, India, the Union of Soviet Socialist Republics, the United States of America, the European Space Agency, the International Telecommunications Satellite Organization, the International Centre for Theoretical Physics, in Italy, the Food and Agriculture Organization, the World Meteorological Organization, the Committee on Space Research and the International Aeronautics Federation.

Paragraph 20 of resolution 44/46 also directed that the participation of the United Nations in International Space Year should be carried out through voluntary contributions from Member States. The United Nations will be communicating with all Member States on this very important subject shortly. The programme elements contained in document A/AC.105/445 and Add.1 and 2 and in others that have been received since the publication of these documents are being consolidated into a guidebook on International Space Year. The United Nations is counting on the generous support of all Member States in order that the activities set forth in this guidebook can be carried out effectively and in order that the participation of the United Nations in International Space Year will be a meaningful and rewarding experience for both the industrialized and the developing countries.

Mr. KHABIROV (Union of Soviet Socialist Republics) (interpretation from Russian): In your introductory statement, Mr. Chairman, you quite rightly pointed out that the improvement in international relations and the major changes for the better taking place in the world have had a beneficial influence on our work as well. Evidence of this can be found in the positive results achieved at the twenty-seventh session of the Scientific and Technical Sub-Committee.

As the Committee is aware, the main theme of the last session of that Sub-Committee was the use of space technology in terrestrial search and rescue and in disaster relief activities, the COSPAS-SARSAT programme. I shall not dwell on the great significance we in the Soviet Union attach to co-operation in this humanitarian field or the efforts we have made and continue to make in the noble cause of establishing a common search-and-rescue system to save human lives.

I would recall that on 27 February of this year the Soviet Union launched another satellite for work in the COSPAS-SARSAT programme. I would also remind the Committee of the statement made by the President of the United States, in which he told us that with the help of that system more than 1,500 human lives had been saved.

With the signing, in June 1988, of the agreement on the international COSPAS-SARSAT programme, a good foundation was laid for a new stage at which, at the relevant Treaty level, we will ensure the effective use of a system in the interests of all mankind. Thus progress is quite clear, and it is no accident that the Scientific and Technical Sub-Committee, emphasizing the successful international co-operation in the COSPAS-SARSAT programme, has called upon countries to make broad use of this system.

(Mr. Khabirov, USSR)

In this connection our Committee could in its report point out the important significance of the co-operation of States in this humanitarian field and recommend to the General Assembly that it include the relevant provisions in its omnibus resolution on outer-space matters.

As in preceding years, a priority agenda item was the question of the use of nuclear power sources in outer space. It is our opinion that the working group of the Scientific and Technical Sub-Committee did sufficiently fruitful work in discussing that problem, as is reflected in its report.

(Mr. Khabirov, USSR)

We believe that the Sub-Committee has laid the ground for further work on the technical aspects of the safe use of nuclear power sources and that that will help to speed up work on legal formulations and lead to an early completion of the drafting of principles governing nuclear power sources.

We should point out that a number of interesting proposals were made during the discussion of this question. Those proposals are being carefully studied by relevant Soviet organizations. Some of them were followed at the last session of the Legal Sub-Committee in the drafting of legal principles. We commend the contribution made by delegations here, and we are for our part prepared to approach the solution of pending issues related to nuclear power sources in a constructive manner.

We should like to inform the Committee that, in a spirit of good will, the Soviet Government intends to support the proposal that a careful assessment be made of the safety of spacecraft equipped with nuclear power sources. Such an assessment should take into account all the relevant phases of spacecraft flight. Indeed, we are prepared to go even further and to accept the proposal that the results of such an assessment be published. Another proposal worthy of attention is the one that suggests providing the United Nations Secretary-General with information on ways to obtain the necessary information on nuclear power sources.

Here, I would emphasize that such an approach is further evidence of the Soviet Union's support of transparency and openness in international affairs. In that same spirit, from 15 to 19 May this year at Obninsk, near Moscow, the Soviet Government organized an international conference on the technical aspects of the use of nuclear power sources in outer space. The majority of those attending the conference felt that there had been a useful and constructive exchange of opinions and information on various aspects of the use of nuclear power sources in outer space.

(Mr. Khabirov, USSR)

At the Sub-Committee's session a great deal of attention was given to the agenda item related to the spin-off benefits of space technology and to the implementation of the recommendations of UNISPACE 82. I should like to take this opportunity to express our gratitude to Mr. Abiodun, the Expert on Space Applications, for his report, which, in our view, gives a full picture of the activities of the Outer Space Affairs Division and of its space applications programme in particular. We have stated on many occasions that the effective solution to such questions must be sought through a shift to broad-based co-operation in outer space.

As far as the Soviet Union is concerned, it has participated and will continue to participate most actively in such activities. In that connection we are pleased to recall that of the 40 proposals for fellowship grants for 1989-1990 that Mr. Abiodun mentioned, more than half were put forward by the Soviet Union. As of 1 September 1990 a full course of study at the Moscow Institute of Engineering, Geodesy, Aerial Photography and Cartography will enable 15 citizens from developing countries who are specialists in aerial photography to obtain a free education. In addition, the Scientific and Technical Production Sector of Moscow's Friendship University, together with the Scientific and Research Institute of the USSR's space programme, has established courses for the training and advanced training of specialists from developing countries at the post-graduate level. Lastly, in 1988 the Soviet Academy of Sciences established six special fellowships in space science and technology, each for a three-year term.

The new Cosmos International Scientific Research Centre, part of the Moscow Aviation Institute, will be making a contribution to strengthening the world brotherhood of scientists and the free exchange of ideas, in order to eliminate enmity and mistrust. That new Centre was set up out of an awareness of the need to

(Mr. Khabirov, USSR)

internationalize education so that, beginning with their days spent at student laboratory workbenches, the future builders of scientific and technological equipment will learn to speak to one another in a common language and will acquire habits of joint work and a notion of the principles and approaches involved in solving scientific and technological problems in different countries. The Centre is being established by the most advanced educational, scientific and research institutions and under the aegis of the Soviet and foreign aerospace industries. It is a non-profit joint venture designed to provide training and refresher courses for specialists in aerospace science and technology.

In order to draft a comprehensive strategy for developing international co-operation in the area of aerospace education in science and technology, we have proposed the establishment of an international co-ordinating council of leading scientists, educators and public figures in various countries. The council would maintain close ties with international organizations concerned with the problems of aerospace education, science and technology. For example, there has been a proposal that the Centre should set up a satellite campus of the International Space University. Although the Centre is a non-governmental organization and there is no proposal to provide direct financing for it from the State budget, the Government will establish conditions favourable to the Centre's activities and grant it broad latitude in the conduct of foreign economic activities. It is our hope that that Centre will occupy a place of honour within the system of international institutes and become an effective instrument for facilitating co-operation among countries in the peaceful conquest of outer space.

At the request of the Secretary-General the Soviet Government recently submitted to the United Nations Secretariat a detailed list of highly qualified Soviet experts specializing in various areas of space science and technology. That

(Mr. Khabirov, USSR)

information is contained in document A/AC.105/456. Other countries have done the same. This is a clear example of our country's readiness to assist the developing countries by informing them of those areas of applied astronautical science in which the Soviet Union has accumulated rich experience.

When we come to the environmental orientation of our undertakings, special attention is being given to natural-resource and other types of outer-space research, and in that connection the Soviet Union plans to launch in 1991-1992 a specialized environmental module, as part of the "Mir" Space Station, equipped with the necessary scientific equipment. Information on that project is contained in the working document recently submitted by the Soviet Union, which will be published shortly.

(Mr. Khabirov, USSR)

At the same time wide-ranging work is being carried out in my country on the ALMAZ project; this was mentioned during the session of the Scientific and Technical Sub-Committee. In 1994 we plan to launch a third ALMAZ space station which, we propose, could be the basis for an international space laboratory for environmental monitoring and for research into the Earth's natural resources. We have already had an opportunity to talk with Governments interested in participating in the ALMAZ programme, and I reiterate our invitation. I recall that detailed information on the ALMAZ programme is to be found in document A/AC.105/C.1/L.165 of 2 March 1990. We think that participation in the project by various countries would not only be of practical use in monitoring the environment but also constitute a good example of international co-operation.

The Soviet delegation welcomed the Sub-Committee's decision to alter the name of the item on the "geosphere-biosphere", thereby emphasizing the implementation of national and international space projects related to the Earth's environment. In our view, this lays a basis for discussion within United Nations bodies on outer space of burning environmental problems and for the co-ordination of international environmental-protection efforts.

We are satisfied with the decision to give great attention to the Sub-Committee's discussion of the item on space debris. We think the time has come for the Sub-Committee to get down to brass tacks on this question and arrive at agreed recommendations.

Let me conclude by expressing the hope that the activities of the Committee and its two Sub-Committees will be effective in facilitating further development and strengthening of international co-operation in outer space and in solving theoretical and applied problems regarding the use of outer space for peaceful purposes.

Mr. KNUTH (German Democratic Republic): My delegation fully agrees with many other delegations that the last session of the Scientific and Technical Sub-Committee, held in February this year, was very productive and that it will inspire future discussion, and we hope solution, of the agenda items before us. That success and progress are undoubtedly due to the improving international atmosphere, but credit should go also to Professor John Carver, who chaired the Sub-Comittee and its Working Group on nuclear power sources in a very diplomatic and skilful manner.

The most apparent progress was reached in solving the difficult technical issues connected with principle 3 on the guidelines and criteria for the safe use of nuclear power sources in outer space. Unfortunately, the optimism and hope of many participants that this clear example of a growing spirit of compromise would lead to the adoption in the Legal Sub-Committee of all the outstanding principles on nuclear power sources did not materialize. My delegation hopes that consultations during this session of the Committee on the Peaceful Uses of Outer Space can remove the remaining obstacles to the speedy adoption of this important set of principles in the very near future.

In the view of my delegation, another step forward was taken in the Working Group of the Whole, so ably chaired by Mr. Raimundo Gonzalez of Chile. It is in particular the specific areas defined to demonstrate the potential of space technology for some of the most pressing needs of developing countries that offer a good point of departure for future substantive and concrete work to implement the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82).

In that regard we wish again to commend the activities of Mr. Abiodun and his colleagues in carrying out the United Nations Programme on Space Applications

(Mr. Knuth, German Democratic Republic)

despite insufficient funding. Through institutes of the Academy of Sciences, the German Democratic Republic has for many years actively supported that Programme by granting fellowships and organizing training courses, at high national cost. As an addition to our many programmes of bilateral and multilateral co-operation, we see that support of a specific programme of the United Nations within the mandate of this Committee as an obligation arising from the spirit of UNISPACE 82 and its call for broader and more tangible assistance to developing countries.

Many delegations have proposed that the Scientific and Technical Sub-Committee should start in-depth discussions of all aspects of debris in outer space and include this as a new item on its agenda. The delegation of the German Democratic Republic fully supports that view. We believe it is high time to analyse the scientific and technical aspects of this ever-growing threat to the Earth's environment and to elaborate internationally acceptable and technically feasible proposals to minimize its negative potential. The presence in the near future of permanently manned space stations with large cross-sections and high requirements on space transportation systems will very suddenly lead to a change in public opinion on this dangerous aspect of living in outer space.

It would therefore seem to be more advisable for our Committee to take up this matter in good time, before it is compelled to do so in the aftermath of an incident in orbit. There will be time to take up the debris problem in the Scientific and Technical Sub-Committee after finalizing the main content of the item on nuclear power sources. This could also add a new element of streamlining to the more and more diversified and general scientific discussions and presentations in the Sub-Committee. That would be in accordance with our main mandate, which is to solve complicated technical issues as the basis for new legal guidelines and regulations in the interests of all nations.

Ms. CLAPP (United States of America): The United States welcomes the opportunity to provide its views on the results of the work of the Scientific and Technical Sub-Committee and the implementations of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82). We wish to extend our special appreciation for the efforts of Professor John Carver, who once again ably led the Sub-Committee through its agenda, and to Mr. Abiodun and his staff for a job well done over the past year.

Before beginning my comments on the work of the Sub-Committee, I should like briefly to note that this past April an event of historic significance to the astronomy community took place. I am speaking, of course, of the launch of the Hubble space telescope, a co-operative project between the National Aeronautics and Space Administration of the United States (NASA) and the European Space Agency (ESA). We are optimistic that the capabilities of the Hubble space telescope will open up whole new regions of discovery into the next century, perhaps redefining the limits of astronomy as we know it today.

I should like to preface my remarks on the work of the Sub-Committee by noting how pleased my delegation was with the Sub-Committee's treatment of this year's theme: "The use of space technology in terrestrial search and rescue and in disaster relief activities".

(Ms. Clapp, United States)

In particular my delegation takes satisfaction in the Sub-Committee's recommendation that Member States and relevant international organizations consider utilizing to the maximum extent possible the COSPAS-SARSAT system for global satellite-aided search and rescue activities. The COSPAS-SARSAT system clearly represents an outstanding example of how international space co-operation can contribute to terrestrial search and rescue operations. In fact, 18 countries now participate in the programme, and to date over 1,500 lives have been saved using the COSPAS-SARSAT system (Space System for Search for Vessels in Distress - Search and Rescue Satellite).

I would also like briefly to recognize the importance of this year as the thirtieth anniversary of the launching of the first weather satellite. Over the past 30 years, international co-operation in the use of the data derived from meteorological satellites has flourished, not only leading to a better understanding of the Earth's changing weather patterns but also providing time-critical weather information to nearly every part of the globe. My delegation welcomes the concluding language in the Sub-Committee's report that recognizes the important role that meteorological observations from space have played and will continue to play in monitoring the Earth's environment from space.

In the area of nuclear power sources (NPS) in space, we were pleased to see the Sub-Committee respond positively to the views expressed last year by some delegations that additional time be allocated to the agenda item on NPS. My delegation feels that progress on this important issue must remain at the top of the Sub-Committee's agenda. The United States notes with satisfaction that the Working Group highlighted in its report the descripton of the safety assessment process used for the Galileo interplanetary mission presented by the United States. We believe that the safety review process followed for Galileo is

(Ms. Clapp, United States)

illustrative of the type of process that can ensure safe utilization of NPS. In our view, the NPS Working Group has been a valuable mechanism for the Sub-Committee's work on NPS, and as such the Working Group should continue to be convened. As long as we are still working on draft principles, we believe that the Working Group can provide substantive technical guidance to the Legal Sub-Committee as that Sub-Committee carries out its own responsibilities in this area.

In this year's Scientific and Technical Sub-Committee's meeting the United States was particularly pleased with the recognition given the success of the Telemedicine Spacebridge which had connected medical centres in the United States with Armenia in the town of Ufa in the USSR. At the conclusion of the operation the Spacebridge had served over 200 patients. The Telemedicine Spacebridge is a touching example of how international space co-operation can rise to the occasion, meeting very real and immediate human needs that arise in the midst of disaster.

I would also like to note my delegation's support for the Sub-Committee's decision to change the title of the agenda item on progress in the geosphere-biosphere programme to include "national and international space activities related to the Earth's environment". We believe that this change will encourage the exchange of information on a broader spectrum of programmes related to global change and environmental monitoring.

In this regard we note that some have suggested that this item should be broadened to include questions of the space environment, including space debris, or that space debris should be on the Sub-Committee's agenda as a separate item. We do not share this view. We believe that the General Assembly in resolution 44/46 laid out the proper approach when it concluded that it is essential that Member States pay more attention to the problem of space debris and called for the continuation of national research. We take that injunction seriously and have expended considerable effort on the matter.

(Ms. Clapp, United States)

For example, building on previous research in the United States we are now in the final stages of preparing a multi-year, two-phase orbital debris research plan. The plan focuses on research in two vital areas: characterization of the debris environment and methods of minimizing and surviving debris.

Finally, the United States was gratified with this year's discussion of International Space Year in the Sub-Committee. Consistent with General Assembly resolution 44/46, we are convinced that the training and education capabilities of the United Nations Space Applications Programme can be utilized to bring about a meaningful role for the United Nations through voluntary contributions and without any impact on the regular budget of the United Nations or the existing programme of work of the Space Applications Programme.

I am pleased to report that my delegation has made significant progress in working with the Space Applications Programme to define several activities for International Space Year. As noted in the working paper submitted by the United States in February 1989 (A/AC.105/C.1/L.160), we believe that the activities under consideration will result in concrete United Nations contributions to International Space Year, taking into particular account the needs of developing countries. We were also pleased with the contribution made by the Outer Space Affairs Division regarding participation of the United Nations in International Space Year (A/AC.105/445). We were particularly gratified to see that the Space Applications Programme will enjoy a clearly focused role for the United Nations substantive contributions to International Space Year.

Ms. ZHENG Lizhong (China) ((interpretation from Chinese): Mr. Chairman, first of all, allow me, on behalf of the Chinese delegation, to express our gratitude to you for your consistent concern and support for the work of the Scientific and Technical Sub-Committee and, through you, to pay our tribute to Professor H. Carver, Chairman of the Scientific and Technical Sub-Committee. We

(Ms. Zheng Lizhong, China)

appreciate the valuable work done by the Scientific and Technical Sub-Committee under Professor Carver's guidance, which ensured the smooth progress of the twenty-seventh session of the Scientific and Technical Sub-Committee. The Chinese delegation is pleased to see the unremitting efforts made since UNISPACE-82 by the relevant United Nations bodies and the United Nations Space Applications Programme for the noble cause of using outer space for peaceful purposes in the interest of mankind. We commend the Outer Space Affairs Division for giving priority to the Outer Space Applications Programme and focusing on the effective use of the limited resources.

In recent years, for implementing the Outer Space Applications Programme, activities of various kinds have been undertaken, such as in-depth training, technical counsel services, seminars, workshops and experts meetings. In 1989, seven training courses and workshops were conducted in which more than 100 experts from developing countries joined. These activities help to strengthen co-operation and exchange between States and to play a positive role in training personnel from developing countries and sharing the achievements of space science and technology. We support the decision that the focus of the Outer Space Applications Programme continues to be placed on space technology and in-service training in various fields of application, especially in the new developments of satellite systems, remote sensing software, data processing systems and ground-station management.

(Ms. Zheng Lizhong, China)

In the light of the successful experience gained by some developing countries in space technology applications that has more practical value to other developing countries, we propose that more experts from developing countries be enrolled in the United Nations Space Applications Programme for technical counsel services and personnel training.

The Chinese Government has always actively supported the implementation of the Space Applications Programme. In 1991, an international seminar on space technology in combating such natural disasters as floods, forest fires, and hurricanes will be held in Beijing, jointly sponsored by the Chinese Government, the United Nations Outer Space Affairs Division, and the Economic and Social Commission for Asia and the Pacific regional remote sensing programme (ESACP/RRSP). Thirty-five representatives from developing countries and others from some developed countries will be invited to the seminar.

In 1991, the Chinese Government will offer two fellowships at Wuhan Cartographic Institute of Science and Technology for training in satellite geodesy and remote-sensing cartography. Those two activities will be China's contribution in kind to the Space Applications Programme.

The remote sensing of Earth by satellite, including applications in developing countries, is a very important question. In recent years, prices for remote sensing information have risen, which is worrisome and will surely affect the use of information, especially of remote sensing information by developing countries to deal with their serious resource and environmental problems. According to Article 12 of the principles on remote sensing of Earth by satellite, adopted by the United Nations in 1986, it is important that States with remote sensing capabilities provide, in time, remote sensing data and its analysed information to developing countries and that they undertake to ensure the continuity, complementarity and

(Ms. Zheng Lizhong, China)

compatibility of future remote sensing technology systems. We support the placing of "Remote sensing of Earth by satellite, including applications in developing countries" in next year's agenda as a priority item.

The use of nuclear power sources in outer space is a question of common concern. We are pleased to see that the safety standards and guidelines formulated by the Scientific and Technical Sub-Committee have been accepted by the Legal Sub-Committee and included in the draft text of relevant legal principles. We support the Scientific and Technical Sub-Committee's continuing its deliberations on safety standards, technological problems concerning re-entry into the Earth atmosphere, and rescue liability questions. We also support keeping the issue of nuclear power sources on the agenda as a priority item.

The forty-forth session of the General Assembly endorsed the designation of 1992 as International Space Year (ISY). The Chinese Government attaches importance to the activities of ISY and has submitted to the current session a working paper on the Year in document A/AC.105/L.185.

We are prepared to develop co-operation with other countries through ISY activities and to do our share to protect and improve the ecological environment as well as to exploit Earth resources. During International Space Year, China will host a seminar on Earth science in February and March 1992. Furthermore, in the context of the activities conducted by the relevant United Nations bodies, China will organize a series of workshops and training courses, carry out relevant research activities in scientific application, set up data banks, publish maps, books and advertising materials, and make available our data to the countries concerned. China will participate in such international co-operation items as global Earth change, the diminishing rate of global forest areas, the ozone hole, sea ice, the electronics encyclopaedia, and the compilation of drawings and charts on changes of the globe.

(Ms. Zheng Lizhong, China)

We subscribe to the decision that the application of outer space technology in ground searching, rescue and relief activities be fixed as a theme of special attention at the 1990 session of the Scientific and Technical Sub-Committee. At present, natural disasters are a problem of world-wide import. Unexpected natural disasters are a grave threat to the security and social welfare of mankind. China is a country where such disasters frequently occur. The Chinese Government is greatly interested in applying advanced technology in remote sensing and satellite communications to flood- and forest-fire control, as well as to forecasting, assessing and dealing comprehensively with geological disasters.

Since 1987, China has carried out anti-flood remote sensing experiments successively along the Yongding, Yellow, and Yangtze Rivers in an attempt to utilize fully such technological systems as remote sensing and satellite communications, as well as geographic information. Thus, the Department of Disaster Prevention and Relief in Beijing, hundreds of miles away, is able to observe developments and take timely decisions for combating disasters and reducing ensuing losses. China is also doing research on aerial remote sensing real-time monitoring system for forest fires, and conducted an experiment in 1989. Moreover, China plans to establish a national remote sensing real-time/quick-monitoring system for natural disasters and a national laboratory for fire disasters.

We welcome the decision that the special theme for the 1991 session of the Scientific and Technical Sub-Committee is to be "Application of airborne and satellite remote sensing for prospecting mineral and ground-water resources, monitoring and management of biological resources with emphasis on agriculture, taking into particular account the needs of developing countries". China is a developing country with a vast territory, large population, and diverse natural

(Ms. Zheng Lizhong, China)

conditions. In response to the policies of reform and openness, and in order to meet the need to modernize, we need urgently to prospect for ground water and ascertain the total volume of mineral deposits. In order to feed the population of China, which accounts for 22 per cent of the world's population, on an arable land that is only 7 per cent of the total arable land in the world, we place special emphasis on agricultural production management, including regional planning, agricultural output estimation, and pest forecasting.

Since the beginning of the 1980s, work on national investigation mapping for land-resource status and national investigation mapping for soil erosion has been carried out through satellite pictures, aerial photography and conventional methods, so that the size of the total land areas and of each province, as well as the state of soil erosion, can be ascertained on a preliminary basis that will serve as basic data to map out plans for national economic reconstruction.

(Ms. Zheng Lizhong, China)

In recent years we have carried out a survey of soil erosion in loess plateaux through remote sensing as well as a comprehensive survey of North Shelter reforestation, which covers 4 million square miles. In the area of geological mineral deposits, remote sensing has been used regularly in regional geological surveys. Through remote sensing, gold, copper and zinc target and perspective areas have been found in 14 locations in the Altai Region in Xinjiang Province. Remote sensing has become an increasingly important method in prospecting mineral deposits in China.

In recent years China has witnessed rapid development of satellite-communications applications. Two sets of comprehensive television programmes and another two sets of educational television programmes have been produced through satellites. In order to facilitate educational and cultural exchange in border areas and national-minority areas, four sets of local television programmes have been put into use recently. There are now 20,000 satellite television ground receiving stations. In the satellite communications field, satellite data communication systems with medium and low speed are being developed with the aim of improving communication conditions for special services and remote areas, as well as enhancing local capabilities to meet contingencies when disasters occur. In the application of satellite navigating and locating techniques, China has established a land control network in the mainland and the Nansha Islands through satellite doppler locationing techniques and GPS techniques. In addition, China is carrying out applications experiments in the two-star locationing system.

The year 1989 was a year of bumper harvests in the development of the space technologies of many States. The year 1990 will be a busy year for China in the launching of satellites. This year, we have already successfully launched two Earth geostationary orbit satellites, namely China's fifth operational

(Ms. Zheng Lizhong, China)

communications satellite and the Asia-I communications satellite. We also plan to launch a solar synchronous meteorological satellite and China's twelfth recoverable remote-sensing satellite.

In the field of space transportation systems, China will for the first time launch low-orbit launch rocket CZ-2E, with 8.8 ton launching capacity on trial. China is also developing a new generation of launching rockets with lower costs and stronger propulsion, free from poison and pollution.

Before the year 2000 the focus of China's space activities is the development of application satellites and satellite application, with a view to ensuring more and better space activities to serve the advancement of China's economy, science, education and culture. China is also speeding up its development of a communications broadcast satellite with 24 transponders, a geostationary meteorological satellite and an Earth resources satellite. Research on a disaster monitoring satellite system is also being done.

In developing space technology, China has always upheld the policy of self-reliance and independence. We advocate extensive bilateral and multilateral international co-operation on the basis of equality and mutual benefit. We attach special importance to South-South co-operation.

We are pleased to see that the United Nations Committee on the Peaceful Uses of Outer Space is playing an increasingly important role in promoting the development of international space technology and furthering international collaboration and exchange.

Here wish to express our appreciation to Mr. A. A. Abiodum, the Space Applications Expert, for his valuable work. It is the hope of the Chinese delegation that the current session, under the guidance of our respected Chairman, will be crowned with success, given the participants' concerted efforts and co-operation.

Ms. REDEKER (Federal Republic of Germany): Let me begin with some remarks concerning the nuclear-power-source principles as far as the efforts of the Scientific and Technical Sub-Committee are concerned. The scientific and technological part of the work on those principles has all but been completed now that consensus has been reached on principle 3. Thus an important goal of the work of the Sub-Committee has been achieved. Yet this was possible only because all delegations and experts involved made great efforts to find solutions in the process, demonstrating considerable expertise as well as the necessary willingness to compromise. None the less, their efforts can be regarded as a full success only once agreement has also been reached on the principles which have yet to be decided. Of course, this would also have considerable influence on the work of the Committee on the Peaceful Uses of Outer Space as a whole. It would strengthen the motivation of all concerned to continue to invest valuable time in the work of this Committee and involve it in important new issues and problems.

After the success the Scientific and Technical Sub-Committee has achieved on nuclear-power-source principles, it now has time to deal with new issues and tasks. The Federal Republic of Germany is particularly pleased that an issue of great relevance for the future has been included in the agenda at this year's session - that is, what contributions space activities can render to the protection of the global environment. The fact that agreement was reached quickly on this in the Scientific and Technical Sub-Committee proves that all delegations are convinced of the urgency of this topic, to which they intend to attach high priority within the framework of international co-operation in the scientific and technical fields.

In this connection, from the outset it should be ensured that activities relating to this item not be restricted to presenting ongoing programmes and

(Ms. Redeker, Federal Republic of Germany)

successes achieved so far within the framework of the various space programmes conducted by the different countries but that the Committee on the Peaceful Uses of Outer Space itself, within the scope of its possibilities, play a part in promoting the international co-operation necessary to solve the global environmental problems facing us, in line with its original functions. In this spirit my delegation hopes that, during the next session of the Scientific and Technical Sub-Committee, concrete proposals on the functions and organization of its work can be discussed under this agenda item.

Due to the world-wide increase in space activities, it will nevertheless be necessary to step up supplementary research into undesirable side-effects. For a number of years studies have been conducted in the Federal Republic of Germany into the effects of the use of space vehicles on the environment. The aim is to recognize undesirable developments in good time and to take appropriate steps to counteract them. This involves not least analysing the space debris in orbit around the Earth. The results of these research activities in the Federal Republic of Germany have been presented to the public at international conferences from the outset. In addition, for two years new findings have been made available to the Scientific and Technical Sub-Committee in response to the appeal made by the Committee on the Peaceful Uses of Outer Space. This, along with reports by other countries, is intended to enable the Committee to discuss the need to include these questions and to establish a justification for doing so.

The CHAIRMAN: The next speaker is the representative of the International Telecommunication Union, on whom I now call.

Mr. ELOTU (International Telecommunication Union (ITU)): It is my great pleasure to represent the International Telecommunication Union (ITU) in the work of the Committee on the Peaceful Uses of Outer Space. As members may be aware, last year the ITU held a Plenipotentiary Conference at Nice, France, from 23 May to 30 June. One of the decisions of that Conference, which is the supreme authority of the ITU, was to adopt a Constitution and Convention, treaty instruments binding on the States members of the Union, to replace the International Telecommunication Convention adopted at Nairobi in 1982. The provisions of article 33 of the Nairobi Convention, which dealt with the rational, efficient and economic use of the geostationary satellite orbit, were embodied in the new Constitution with virtually no change.

The Nice Conference also set the programme for future conferences for the period 1989-1994 and adopted a number of resolutions that have a bearing on outer-space matters, details of which can be found in the twenty-ninth report of the ITU on telecommunications and peaceful uses of outer space, which has been distributed to all delegations.

One of the important decisions of the Nice Conference was the creation, effective January 1990, of a new permanent organ, the Bureau for Telecommunication Development (BDT), which absorbs the work of the Technical Co-operation Department and to which I shall refer later, when we take up technical-co-operation matters.

As in the past, the ITU will be dealing with three items on the agenda, namely, 5, 7 and 6. We have, however, taken note of the Chairman's remarks on the need for more discussion on agenda item 3, and we will make a contribution to that item in future.

(Mr. Elotu, ITU)

With regard to agenda item 5, the work of formulating technical standards in radiocommunications is carried out by the Union's International Radio Consultative Committee (CCIR), one of the five permanent organs of the ITU. Current CCIR recommendations and reports, along with questions and study programmes dealing with space communications, are contained in volume 5 of the Sixteenth Plenary Assembly of the CCIR, held at Dubrovnik in 1986, which covers space research and radioastronomy, fixed service using communications satellites, propagation in non-ionized media, standard frequency and time signals, amateur satellite service, mobile satellite services, sharing between fixed-satellite service and radio-relay systems and broadcasting satellite service. The Seventeenth Plenary Assembly of the CCIR has just completed an extraordinarily heavy programme of work at Neuss-Düsseldorf, in the Federal Republic of Germany, where it considered some 170 recommendations, new or revised, on radio systems and services. The Plenary Assembly also undertook a searching review of the organization's working methods and the technical work programme of the CCIR in light of the rapidly changing telecommunication environment. Much public interest in the work of the Plenary Assembly was focused on the standarization of high-definition television, mobile cellular systems and satellite news gathering.

Another permanent organ, the International Telegraph and Telephone Consultative Committee (CCITT), continued its studies on the use of telecommunication satellites for a wide range of services, developing standards and drawing up specifications. In collaboration with the CCIR, its studies on the identification of transmission parameters for the maritime telephone communication system by satellite have led to the preparation of recommendations.

A considerable amount of work has been carried out on the integrated services digital network (ISDN) in the context of satellite communications.

(Mr. Elotu, ITU)

The other specialized permanent organ, the International Frequency Registration Board (IFRB), also contributed in various significant ways in 1989 to space-communications matters of relevance to this agenda item, details of which can be seen in the ITU's twenty-ninth report. As in the past, the ITU participated in the work of the Scientific and Technical Sub-Committee of the Committee on the Peaceful Uses of Outer Space and looks forward to continuing its active participation.

I wish now to turn to agenda item 7, "Implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space". The ITU has continued its technical-assistance activities in a wide spectrum of activities, including the provision of advisory services, project management, human-resources development and feasibility studies in the field of space communications.

In accordance with resolution 22 of the Nairobi Plenipotentiary Conference, which concerns the improvement of the Union's facilities for rendering technical assistance and advice to developing countries, the ITU Technical Co-operation Department, which is now the nucleus of a new organ, the Telecommunication Development Bureau, has during 1989 provided advisory services on satellite communications to a number of developing countries. Assistance was given in the planning of two domestic satellite systems for the Seychelles Archipelago and Mauritania.

The feasibility study of the Regional African Satellite Communication System for the Development of Africa (RASCOM) is now proceeding with its regional-level activities. Based on the assessment of needs earlier obtained from all African countries, consultancy services on the space segment were contracted out, while the terrestrial systems are being studied by the project team. The RASCOM project is

(Mr. Elotu, ITU)

funded on a cost-sharing basis from untied sources, with contributions from the African Development Bank (ADB), the United Nations Development Programme (UNDP), ITU, the Organization of African Unity (OAU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), Italy and the Federal Republic of Germany. The feasibility study of the RASCOM project is expected to be completed by the end of 1990.

Moving on to ITU publications, the dissemination of information on standarization and other work concerning space communications undertaken by the Union was given due emphasis in accordance with resolutions 636 and 637 of the Administrative Council, the Union's governing body.

Every month the ITU Journal publishes a list of artificial satellites launched in the previous weeks as well as articles and information regarding space techniques, telecommunications and launching devices.

In May 1990 a recapitulatory list of artificial satellites launched in 1989 was published in an annex to the Journal. This was prepared from information supplied by members of the Union, the International Frequency Registration Board (IFRB), the Committee on Space Research (COSPAR) and national space-research organizations. Additional information on certain topics was compiled from the specialized press.

As I mentioned earlier, the Union has just published its twenty-ninth Report on Telecommunications and the Peaceful Uses of Outer Space. The report describes the main activities of the Union in 1989 in the field of space communications. It covers such areas as international regulations and their applications and studies and standardization, as well as technical-co-operation activities. It also contains a list of geostationary space stations by orbital position as of 31 December 1989 and reports in its annex on progress made in the development of space communications by some member countries.

The CHAIRMAN: I call on the representative of the European Space Agency.

Mr. ARETS (European Space Agency (ESA)) (interpretation from French): The European Space Agency (ESA) wishes to address agenda item 7 and to indicate how, on behalf of its member States, the Agency has tried to contribute to the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), and how it is ready to contribute to the activities of International Space Year and, more specifically, to assist the United Nations through voluntary contributions in playing an important role in the development of international co-operation - the essential purpose of International Space Year.

The States members of ESA want their essential contribution to this work, directed by the Outer Space Affairs Division, to be co-ordinated by the Agency in order to render it more effective. That role for ESA clearly does not exclude additional voluntary contributions by certain member States, but shows the determination of European countries to ensure that the benefits of space technology are accessible to all.

The Agency's activities in this area take three forms: first, co-operation with the United Nations Programme on Space applications and other United Nations institutions; secondly, the development of co-operation with countries having a special interest in the Agency's activities; and, thirdly, promoting the use of ESA remote-sensing satellites.

In close co-operation with Mr. Abiodun's Division, ESA has developed a fellowship programme in its own institutions. At present four fellows come annually for one-year terms. They come from Asia, Africa and Latin America and are integrated into ESA technical teams; the experience they gain should help their countries make better use of space technology. Thus far, ESA has acted as host to some 20 fellows.

(Mr. Arets, ESA)

The European Space Agency co-ordinates several training seminars together with the Outer Space Affairs Division, and participates actively in others; these were mentioned in Mr. Abiodun's complete report, and I shall not dwell on them now. The executive officers of ESA have engaged in exchanges of views with the United Nations Secretariat concerning ways to make these seminars as useful and effective as possible by pinpointing the goals and requirements of the countries concerned.

With respect to International Space Year, ESA has proposed to the Outer Space Affairs Division that the Agency co-ordinate an important activity to be made available to interested countries with respect to data to be acquired by various remote sensing satellites and received by ESA ground stations at Fucino, Italy, and Maspalomas, Canary Islands. Those two ground stations cover the countries of North and West Africa and use data from Japanese, American and French - and soon European - satellites. That data is processed into compatible form and should be made available to countries of those regions as they choose to implement their own infrastructure programmes. The availability of data will be complemented by on-site training activities.

In the view of the States members of ESA, those activities could be the model for international co-operation and could show the usefulness of satellite data for numerous activities in the fields of economic development and environmental protection. The Commission of the European Communities, whose programme of development assistance to those countries is a large one, will also be associated with these activities.

The second type of ESA activity involves strengthening co-operation with countries interested in the work of the Agency. For the present, I shall mention only the co-operation, which has been under way for many years, with India and Brazil. An agreement on co-operation is now under discussion with Argentina, and

(Mr. Arets, ESA)

the Agency is actively co-operating with Morocco, where next month will see the establishment of data receiving stations for METEOSAT satellites for agricultural and meteorological purposes. Moreover, the Agency maintains contacts with many African and Latin American countries with a view to establishing experimental rural telecommunication networks, initially using the Olympus satellite launched last year by ESA. The development of rural telecommunications is an important development problem for many countries, but unfortunately such telecommunications are not profitable in the short term, and often do not attract the interest they deserve. Through its activities in liaison with interested countries, ESA is trying to demonstrate on a non-commercial basis the possibility, social usefulness and long-term economic usefulness of developing satellite telecommunications among villages and cities which now have no means of communication.

Our third activity involves developing the use of radar equipment aboard the ERS-1 and ERS-2 satellites and, later, on an additional Spacelab orbiting platform. Participants are actively preparing to make use of this new technology, and receiving stations in Europe and Canada are ready for operation. The United States, Japan and Australia will also be ready to make use of this radar data once they become available, in less than one year's time.

It is important for developing countries too to have access to this technology and to be able to make use of it. At present ESA is negotiating many agreements on the reception of this data. We know the complexity of using this new data, and we are aware that we are far from having explored their full potential. Therefore, the Agency is organizing training activities for countries wishing to make use of radar data. Moreover, we want to co-operate with developing countries in the implementation of pilot projects to demonstrate the usefulness of radar technology and familiarize users with it. The European Space Agency offers highly preferential

(Mr. Arets, ESA)

conditions of access in the context of these pilot projects. Co-ordination has been established between ESA and bodies that finance development projects in developing countries, with a view to making maximum use of the special properties of radar.

Finally, we would recall that the ERS satellites will make an active contribution to the calculation of parameters relating to the environment. The Agency is involved in many projects under the International Space Year; and a joint project with the Commission of the European Communities to control deforestation has recently been defined. The first implementation phase will begin in 1991; the Commission and ESA will soon present this programme to countries that might be interested in it. The project is of special interest because the radar equipment permits us to work irrespective of cloud cover and is thus especially suitable for equatorial regions, which are generally covered by clouds and where satellites depending on visual means are severely hampered.

This brief survey shows that the States members of the European Space Agency are aware of the problems under this agenda item and that they are daily working towards specific action to address those problems.

The CHAIRMAN: There will now be a technical presentation by Mr. M.G. Chandrasekhar, Scientific Secretary, Indian Space Research Organization (ISRO), on the Indian remote sensing satellite programme.

There followed a technical presentation.

The meeting rose at 12.40 p.m.